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WEINGARTEN, SCHURGIN, GAGNEBIN & LEBOVICI LLP
TEN POST OFFICE SQUARE
BOSTON, MA 02109

EXAMINER	
BEFUMO, JENNA LEIGH	

ART UNIT	PAPER NUMBER
1771	8

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/745,816	Applicant(s) KRUEGLER, GERALD F.	
	Examiner Jenna-Leigh Befumo	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26 and 29-47* is/are rejected.

7)☒ Claim(s) *27 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Amendment A, submitted as Paper No. 7 on January 6, 2003, has been entered. Claims 1, 3, 5, 6, 16, 17, 18, 23, and 25 have been amended and claims 26 – 47 have been added. Therefore, the pending claims are 1 – 47.

2. Amendment A is sufficient to overcome the 35 USC 112 2nd paragraph rejection set forth in section 3 of the previous Office Action.

3. Additionally, Applicant's arguments are sufficient to overcome the 35 USC 102 based on Lickfield et al. (5,805,512), since Lickfield et al. fails to explicitly teach the amount of the natural and synthetic fibers in the layer. However, a new rejection based on Lickfield et al. is set forth below.

4. Finally, the 35 USC 103 rejection based on Arnold (5,989,113) in the previous Office Action is withdrawn in order to include an additionalreference, as set forth below.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 3, 4, 8, 9, 12, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lickfield et al.

Lickfield et al. discloses a nonwoven laminate comprising a meltblown web layer sandwiched between two outer web layers (column 2, lines 29 – 30). The outer web layers can be a spunbonded nonwoven web or a web formed of staple fibers (column 2, lines 31 – 33). The meltblown layer correspond to the Applicant's fusible nonwoven layer. The meltblown layer can

be made from polyester (column 2, line 40). The first outer ply is a spunbonded nonwoven layer which corresponds to the Applicant's backing layer (column 3, lines 55 – 57). The second outer ply is a carded staple fiber layer comprising a mixture of thermoplastic fibers and absorbent fibers such as cotton or wool (column 4, lines 9 – 23). The second outer ply corresponds to the Applicant's nonwoven fleece layer. The three layers are bonded together by thermal bonding (column 4, lines 64 – 65). In other words, all three layers include fusible fibers which are heated to bond the layers together. Finally, the spunbonded layer will inherently have a greater strength and dimensional stability than the carded layer since the spunbonded layer is made of continuous fibers which are bonded to each other at their crossing points, while the carded staple fiber layer comprises staple fibers which are lightly bonded to each other wherever the fibers have been entangled during production of the carded web.

While Lickfield et al. fails to teach the amounts of the thermoplastic and absorbent fibers in the second outer layer, Lickfield et al. discloses that the absorbent fibers should be present in an amount sufficient enough to impart absorbency to the laminate (column 4, lines 20 – 22). Further, the layer should also have a sufficient amount of the thermoplastic fibers so that the three layers can be thermally bonded together. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the claimed amount of thermoplastic and absorbent fibers, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). One of ordinary skill in the art would want the layer to have as many absorbent fibers as possible to provide absorbency to the laminate, while using enough thermoplastic fibers in the layer so that it will

produce a strong bond with the other layers in the laminate. Thus, claims 1, 3, 4, 8, 9, 12, 17 and 18 are anticipated by Lickfield et al.

7. Claims 1, 2, 5, 7 – 11, 17, 18, 20, 21, 23 – 26, 30 – 34, 40, 41, and 44 – 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hall, Jr. (4,841,684).

Hall, Jr. discloses a surface-finishing member comprising a reinforcing woven scrim layer to which a large batting of wear-resistant fibers a needled, such that the fibers extend through the reinforcing layer (column 2, lines 35 – 45). The scrim layer would inherently be more dimensionally stable and stronger, as well as have a lower elongation to break than the needled nonwoven layer. This would produce a laminate comprising a needled nonwoven which is needled to a backing with fibers extending through the backing layer, to the other side. The laminate is then impregnated with an elastomeric material which would chemically bond the fibers together (column 2, lines 45 – 47). The wear-resistant fibers can be cotton, or polyester, or a blend of the two fibers (column 3, lines 39 – 41). The fiber selection is based on the wear-resistance, needlability, ability to retain finishing compound particles, and the quality of the finish desired to be imparted to the object surface (column 3, lines 44 – 46). Further, Hall, Jr. discloses that blends of cotton and polyester are suitable for use, especially where high temperatures are involved (column 3, lines 47 – 51). Finally, the laminate can be used on existing equipment in the form of a belt or square or round pad, or disk (column 5, lines 41 – 43).

Even though Hall, Jr. discloses that the combination of fibers is dependent on the desired end use of the product, Hall, Jr. fails to teach the amount of natural and synthetic fibers used in the nonwoven fabric. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the claimed amount of synthetic and natural

fibers, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, as set forth above. In this instance, one of ordinary skill would desire a high amount of natural fibers due to its temperature resistance and bulk, and while retaining some polyester fibers to provide added strength and wear resistance to the pad when used in an end product which will have high temperatures. Therefore, claims 1, 2, 5, 7 – 11, 17, 18, 23, 24, 26, 30 – 34, 40, 41, 46, and 47.

Although the limitations of elongation at break and break strength are not explicitly taught by Hall, Jr. it is reasonable to presume that said limitations would be met by the combination set forth above. Support for said presumption is found in the use of similar materials (i.e. blend of cotton and polyester fibers, a scrim reinforcing fabric) and in the similar production steps (i.e. needle-punching the fibers to the reinforcing fabric) used to produce the polishing pad. The burden is upon the Applicant to prove otherwise. Therefore, claims 20, 21, 25, 44, and 45 are rejected.

8. Claims 1, 2, 7 – 11, 17, 18, 20 – 22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zygmont (6,044,515).

Zygmont discloses an applicator pad which can be used to apply creams or cosmetics, polish surfaces, or to wipe surfaces (column 1, lines 13 – 24). The applicator pad comprises a pad layer made from an absorbent material capable or releasing or retaining fluids or other materials as desired (column 3, lines 5 – 7). The pad is preferably a made from entangled cotton, woven fiber or fabric, gauze, or other fabrics which preferably are made from cotton or a cotton-polyester blend (column 3, lines 14 – 20). Zygmont discloses that the choice of materials is based on factors such as softness, non-linting, pad integrity, and low abrasivity (column 3, lines

20 – 21). The pad has a preferred thickness of 0.125 to 0.250 in (column 3, lines 21 – 23). The entangled structure would have the same structure as the Applicant's claimed needle-punched product, since needle-punching produces a nonwoven fabric having entangled fibers.

The pad is attached to a backing layer made from a plastic film which is liquid impervious or coated paper (column 3, lines 35 – 45). This film or coated paper would inherently be more dimensionally stable and stronger that the entangled nonwoven pad. The backing layer is bonded to the pad layer by using a hot melt adhesive, pressure sensitive adhesive, thermal fusion, solvent welding, or solvent fusion (column 3, lines 55 – 59). The pads are produced in disc shape or circular applicators (column 4, lines 28 – 30).

While Zygmont discloses material can be a cotton-polyester mixture, Zygmont fails to teach the amount of cotton and polyester which can be used in the mixture. However, Zygmont does discloses that the material is chosen based on the properties of the final product. Also, Zygmont discloses that the invention may be used with various modifications to the arrangement, proportions, and materials (column 8, lines 15 – 18). Therefore, it would have been obvious to one of ordinary skill in the art to choose the amount of natural and synthetic fibers claimed, since it has been held that where the general conditions are disclosed discovering workable ranges involves only routine skill in the art, as set forth above. One of ordinary skill would be motivated to have a high amount of cotton so that the pad is absorbent, soft and bulky in the final product. While the polyester would be required in a lesser amount to provide added strength to the pad and increase the wear resistance of the pad. Thus, claims 1, 2, 7, 8, 9, 10, 11, 17, 18, 22, and 24.

Additionally, although the limitations of elongation at break and break strength are not explicitly taught by Zygmont it is reasonable to presume that said limitations would be met by the combination set forth above. Support for said presumption is found in the use of similar materials (i.e. blend of cotton and polyester fibers, a film backing layer) and in the similar production steps (i.e. entangling the fibers to form a nonwoven and bonding the nonwoven to the reinforcing fabric) used to produce the pad. The burden is upon the Applicant to prove otherwise. Therefore, claims 20, 21, and 25 are rejected.

9. Claims 1, 2, 5 – 12, 14 – 26, 29 – 35, and 37 – 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold in view of Berger et al. (5,482,756) and Stahl (4,599,761).

The features of Arnold and Berger et al. have been set forth in the previous Office Action. Arnold discloses a nonwoven article used to polish or clean surfaces (column 1, lines 5 – 9). The nonwoven article is formed by needling or liquid or gas jets which mechanically entangle the fibers in the nonwoven fabric (column 3, lines 49 – 53). The fibers present in the fleece can be natural or synthetic fibers which are mixed together (column 3, lines 63 – 64). Natural fibers include cotton, wool, linen or hemp (column 3, lines 65 – 66). And synthetic fibers include polyester, polyamide, or aramid fibers (column 4, lines 2 – 3). The fleece material can also include a fraction of bond fibers connected at their crossing points under the influence of heat (column 4, lines 8 – 10). The bond fibers have a lower melting point than the remaining fibers (column 4, lines 13 – 16). The fleece has a thickness of 0.3 to 5 mm, or 0.01 to 0.20 in (column 4, line 33) and a density of 0.1 to 0.5 g/cm^3 , or 6.2 to 31.2 lb/ft^3 (column 6, line 23). The nonwoven fleece can be formed into disc or belt (column 4, lines 49 – 55). The fleece

material can be used in various forms such as a flat disc, pad, or roll (column 4, lines 34 – 36). Arnold fails to teach applying a backing layer to the nonwoven fleece.

Berger et al. is a nonwoven article suitable for abrasive and polishing belts pads and discs (column 2, lines 13 – 15). Berger et al. discloses that it is know to reinforce nonwoven polishing materials by bonding the nonwoven web into a support web (column 1, lines 32 – 50). Berger et al. discloses a laminate polishing material which comprises a fibrous layer, a woven stretch resistant cloth and a polymeric layer (column 3, lines 1 – 8). The fibrous layer is needle-punched to the woven fabric layer and projects a fibrous loops on the opposite side of the woven fabric as shown in Figure 6 (column 3, lines 20 – 25). The woven fabric is stretch resistant (column 4, lines 33 – 36). Hence, the woven fabric would reinforce the fibrous layer by providing dimensional stability and strength to the composite. The woven fabric can be made from various materials including polyester (column 4, lines 40 – 43). Further, Berger et al. teaches adding a polymeric layer to the side of the woven fabric opposite of the fibrous layer (column 4, lines 50 – 52). The polymeric layer provides the composite with increased stiffness and durability (column 4, lines 56 – 60). The polymeric layer is a thermoplastic extruded polymer such as polyester (column 5, lines 62 – 67). Finally, Berger et al. also teaches that the composite material is flexible and resistant to heat buildup (column 5, lines 44 – 47). Therefore, it would have been obvious for one having ordinary skill in the art to add the reinforcing layer taught by Berger et al. to the nonwoven polishing fleece taught by Arnold et al. to make the polishing fabric stronger, more dimensional stable, and more durable, which would increase the life of the polishing cloth since Arnold et al. teaches the fleece can be used in the form of a flat disk or pad which would placed under more pressure and stresses than a folded ring construction. Finally, the woven

fabric or the polymeric layer would individually or combined have a greater tensile strength and dimensional stability, and a smaller elongation at break than the nonwoven fleece layer.

Further, even though Arnold discloses blends of natural, synthetic, and binder fibers can be used in the nonwoven fleece, Arnold fails to teach the amount of each type of fiber. Stahl is drawn to a polishing disk. Stahl discloses the preferred fiber mixture in the fabric is 60 – 90% cotton and 40 – 10% polyester fibers (column 3, lines 20 – 23). Therefore, it would have been obvious to one of ordinary skill in the art to choose the cotton/polyester mixture taught by Stahl in the polishing disc taught by Arnold et al., since Stahl discloses that this is the preferred fiber mixture for the material. Thus, claims 1, 2, 5 – 12, 16 – 19, 22 – 24, 26, 29 – 35, 39 – 42, and 45 – 47 are rejected.

With respect to claims 14 and 37 it would have been obvious to one of ordinary skill in the art to choose the claimed amount of chemically binding fibers since it has been held that where the general conditions are disclosed discovering workable ranges involves only routine skill in the art, as set forth above. One of ordinary skill would be motivated to have optimize the amount of chemical fibers so that the binding fibers would provide added strength, wear resistance, and dimensional stability to the nonwoven fabric without making the fabric too stiff or rigid to function as designed. Thus, claims 14, 15, 37, and 38 rejected.

Finally, Although the limitations of break strength and elongation at break are not explicitly taught by Arnold or Berger et al., it is reasonable to presume that said limitations would be met by the combination of the two references. Support for said presumption is found in the use of similar materials (i.e. a needled nonwoven fleece layer, a reinforcing backing layer) and in the similar production steps (i.e. needling the nonwoven fleece to the reinforcing backing

layer) used to produce the polishing material. The burden is upon the Applicant to prove otherwise. Thus, claims 20, 21, 25, 43, and 44 are rejected.

10. Claims 13 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold in view of Berger et al. and Stahl as applied to claim12 and 35 above, and further in view of Matsunaga et al. (5,554,442).

The features of Arnold, Berger et al., and Stahl have been set forth above. Arnold fails to teach the type of low melt binder fibers used in the nonwoven fleece. Matsunaga et al. is drawn to a nonwoven fabric bonded by binder fibers. The binder fiber have a low melting point and made from a polyester copolymer (abstract). Matsunaga et al. teaches the nonwoven fabric is resistant to flattening during prolonged use (abstract). Thus, it would have been obvious for one having ordinary skill in the art to use a polyester binder fiber as taught by Matsunaga et al. in the nonwoven fleece taught by Arnold since the fiber has a low melting point and produces a fabric which is resistant to flattening during prolonged use. Also, it would have been obvious to one having ordinary skill in the art to choose a polyester binder fiber, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. One of ordinary skill in the art would be motivated to use any readily available, compatible binder fibers since Arnold fails to teach using a specific type of binder material in the nonwoven fabric. Thus, claims 13 and 36 are rejected.

Response to Arguments

11. Applicant's arguments filed January 6, 2003 have been fully considered but they are not persuasive. The Applicant argues that Lickfield et al. would not suggest using at least 50%

natural fibers, since Lickfield et al. teaches that the natural fibers are added in an amount sufficient to impart absorbency to the nonwoven fabric (Amendment A, pages 8 – 9). However, this teaching would suggest to one of ordinary skill in the art the amount of natural fibers added is directly related to the absorbency of the fabric. And when the fabric is used in situations which require high absorbency, the fabric should include a large percent of natural fibers. Further, the Applicant argues that the material taught by Lickfield et al. is used as a barrier layer and not a buffing or polishing material. The limitation that the fabric is a buffing or polishing material is viewed as intended use and does not distinguish the multi-layer article claimed by the Applicant over the multi-layer article taught by Lickfield et al. Further, the fabric in Lickfield et al. could be used to polish or buff a surface. Therefore, the rejection is maintained.

12. The Applicant argues that the combination of the Arnold and Berger et al. is improper since Arnold and Berger use the polishing cloths in different manners (Amendment A, pages 10 – 12). However, Arnold et al. discloses that the nonwoven fabric can be used in multiple configurations including a flat disc or pad (column 4, lines 34 – 35). These configurations would not prevent a reinforcing backing layer from being bonded to the nonwoven structure. Further, the suggestion that the fabric can be used in these other constructions would teach one of ordinary skill in the art that the material while useful in the buffing tool shown in the figures can also be used in other tools used to buff or polish surfaces. Thus, one of ordinary skill in the art would look to other teachings such as Berger which describe how nonwoven fabrics can be strengthened and reinforced for increased resistance and life. This would expand the market for the nonwoven buffing cloth taught by Arnold. Therefore, the rejection is maintained.

13. Further, the Applicant argues that the amount of natural and synthetic materials in the nonwoven fabric would not be obvious to one having ordinary skill in the art (Amendment A, pages 12 – 13). However, as set forth above, Stahl discloses that it is known to used the Applicant's claimed range in nonwoven polishing pads having a similar structure as those taught by Arnold. Therefore, Stahl establishes that it is known to use polishing or buffing cloths having similar ranges of synthetic and natural components, as those disclosed by the Applicant. Thus, the rejection is maintained.

14. Additionally, the Applicant argues that the prior art does not disclose the advantageous properties produced by using binder fibers in the nonwoven fabric (Amendment A, pages 14 – 15). However, Arnold specifically teaches using binder fibers in the nonwoven fabric and the advantageous properties the Applicant is arguing are not recited in the claims. Arnold does not need to teach these properties since Arnold teaches that the binder fibers are present, and these advantageous properties which are due to the presence of the binder fibers would be inherent to the fabric taught by Arnold. Additionally, the Applicant argues that the fabric taught by Matsunaga et al. would not be appropriate for a buffing or polishing cloth. However, Matsunaga et al. was relied on to teach types of known binder fibers used in nonwoven fabrics. Since Arnold suggests binder fibers can be used without specifically teaching materials and temperatures which can be used in the binder fibers one of ordinary skill in the art would be required to look to other known binder fibers to choose the binder fiber used in the fabric. Therefore, the rejection is maintained.

Allowable Subject Matter

15. Claims 27 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach or fairly suggest a laminate structure comprising a nonwoven fabric having a blend of at least 50% natural fibers and the remaining portion synthetic fibers which are needle-punched and chemically bonded together, said nonwoven being needle-punched into a backing layer, wherein a nonwoven fusible layer is interposed between the nonwoven layer and the backing layer. While the prior art teaches that nonwoven materials can be needle-punched into a backing layer, the prior art fails to teach having a nonwoven fusible which is interposed between the fleece layer and the backing layer. Since needle-punching bonds the backing layer and the nonwoven layer together, there is no reason to modify the prior art by the addition of a fusible nonwoven layer between the two layers.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (9:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo
March 24, 2003

CHERYL A. JUSKA
PRIMARY EXAMINER